

**POPULATION STATUS REPORT
NORTHERN BOBWHITE and RING-NECKED PHEASANT – 2010**

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WEATHER SUMMARY

The winter of 2009-2010 was characterized by colder than normal temperatures and above average snowfall. Portions of northwestern Missouri reported nearly 50 inches of snow, and snow remained on the ground from December through the end of February due to cold temperatures. The northern part of the state received between 20-40 inches of snow, and the rest of the state ranged between 10-20 inches of snow. Periods of prolonged snow cover will result in high mortality rates of quail, reducing the number of birds available for breeding in the spring. The spring of 2010 brought slightly above normal temperatures, and March and April were slightly drier than average. May rainfall averaged about 2 inches above normal statewide. Summer rainfall was variable throughout the state, with the northern portion averaging higher than normal (much higher in places) while southern Missouri experienced lower than average rainfall amounts. Wet springs can hamper nest success and chick survival. Spring 2010 brought the 3rd year in a row of unseasonably wet spring weather for northern Missouri. Table 1 lists winter snowfall and spring/summer rainfall averages and departures from normal by MDC administrative region. A map of MDC administrative regions is shown in Figure 1a.

TABLE 1. Missouri 2009-2010 winter snowfall and spring/summer rainfall summary.

	MDC Administrative Regions ¹							
	NE	NW	C	KC	STL	OZ	SE	SW
Winter ² 2009-2010 snowfall (inches)	30.3	42.0	20.7	20.0	11.7	9.7	10.7	20.1
Departure ³ from normal (inches)	+4.5	+18.0	+0.3	+5.4	+2.1	+7.7	-3.7	+0.6
Spring/Summer ⁴ rainfall (inches)	37.3	27.5	20.7	31.0	24.1	14.5	18.6	21.4
Departure from normal (inches)	+16.0	+5.7	+5.4	+10.3	+4.1	-5.5	-2.0	+0.6

1. Map of MDC Administrative regions shown in Figure 1a.
 2. Winter snowfall is the average total for the region from November 1, 2009 through March 31, 2010.
 3. Departure calculated from 1971-2000 norms.
 4. Spring/summer rainfall is the average total for the region from April 1 through August 31, 2010.
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QUAIL ABUNDANCE

Conservation Agents conducted roadside counts of bobwhite quail from August 1-15 in 110 of Missouri's 114 counties. Clay, Jackson, St. Louis, and St. Charles counties are not included because they are high-density urban areas near Kansas City and St. Louis. Surveyors count the number of quail observed while driving ≤ 20 miles per hour along permanent 30-mile gravel road routes. Participants are instructed to conduct counts beginning at sunrise on clear, dewy mornings with light winds to increase chances that bobwhites will be near roadsides. These observations are used to provide an index of quail abundance across the landscape. Because only a small portion of each county is sampled, the index best represents quail population trends at large scales, such as statewide and multi-county blocks such as the zoogeographic region. The statewide long-term trend of the index closely follows other statewide indices of abundance including the North American Breeding Bird Survey (BBS) and Missouri quail harvest estimates. The roadside survey routes are located almost entirely through private land, so the quail index is a reflection of conditions on Missouri's private lands.

This year's statewide index of 2.2 quail per 30-mile route is 17% below last year's index of 2.7. This is 29% below the 5-year average (2005-2009) and 37% below the 10-year average (2000-2009) (Table 2). Production appeared to be low this year at the time of the survey with the statewide average chick count at 0.7, which was slightly lower than last year (0.8). Total quail counts were variable among zoogeographic regions with counts being highest in the Mississippi Lowlands (3.7), followed by the Northeast Riverbreaks (2.7) and the Western Prairie (2.3). Counts were lowest in the Northwest Prairie (1.5) and the Northern Riverbreaks and Western Ozark Border (both at 1.9) (Table 2). Statewide long-term trends (1983-2010) are shown in Figure 2 and trends by zoogeographic region are shown in Figure 3. Both figures illustrate a long-term downward trend in bobwhite populations.

TABLE 2. Average number of quail counted per 30-mile route by Conservation Agents along 110 routes during August 1-15, 2010.

Zoogeographic Region	# of Routes In 2010	Quail counted 2010	Quail counted 2009	Long Term Average 1983-2009	% CHANGE from Long-Term Average	% CHANGE 2009 to 2010
Northwest Prairie	11	1.45	4.18	7.51	-80.7%	-65.3%
Northern Riverbreaks	11	1.91	2.91	7.45	-74.4%	-34.4%
Northeast Riverbreaks	20	2.70	2.70	9.10	-70.3%	0%
Western Prairie	12	2.25	3.08	14.58	-84.6%	-26.9%
Western Ozark Border	13	1.85	3.92	6.59	-71.9%	-52.8%
Ozark Plateau	24	2.00	2.0	2.91	-31.2%	0%
Northern & Eastern Ozark Border	12	2.17	1.25	2.69	-19.4%	73.6%
Mississippi Lowlands	7	3.71	1.43	5.50	-32.6%	159.4%
Statewide	110	2.20	2.66	6.87	-68.01%	-17.3%

¹See figure 1b.

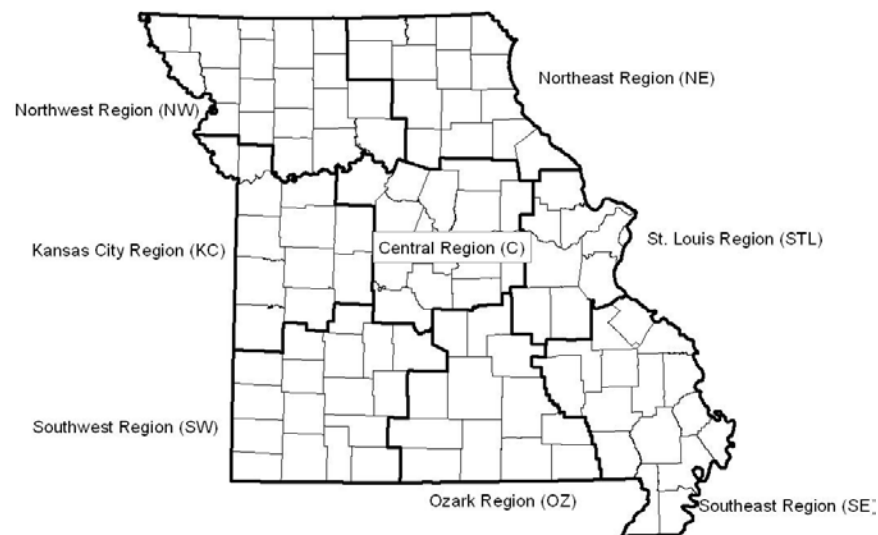


FIGURE 1a. MDC administrative regions.

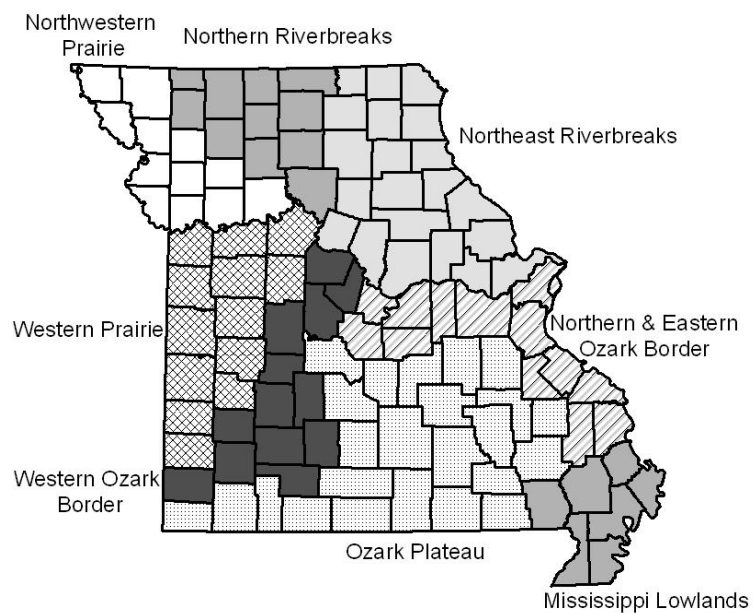


FIGURE 1b. Zoogeographic regions of Missouri.

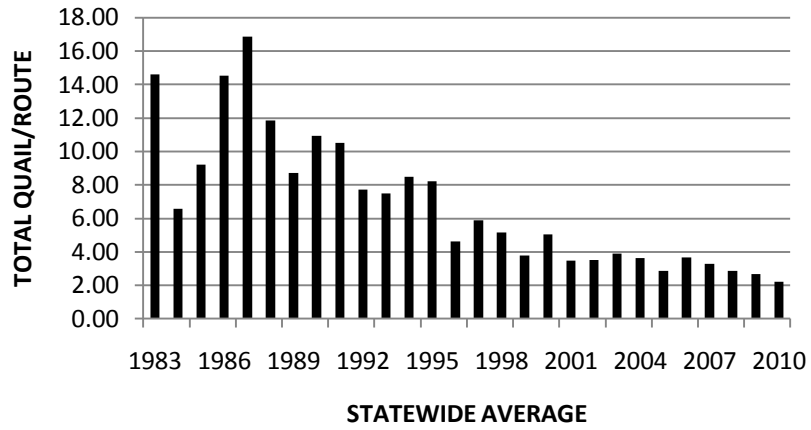
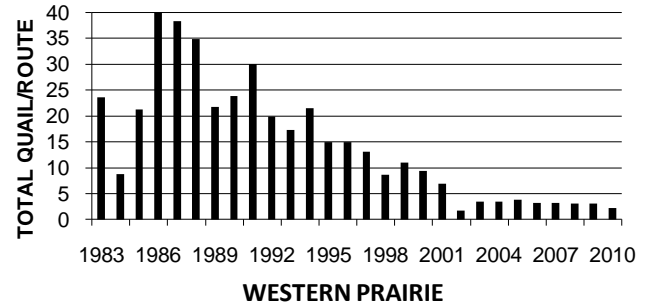
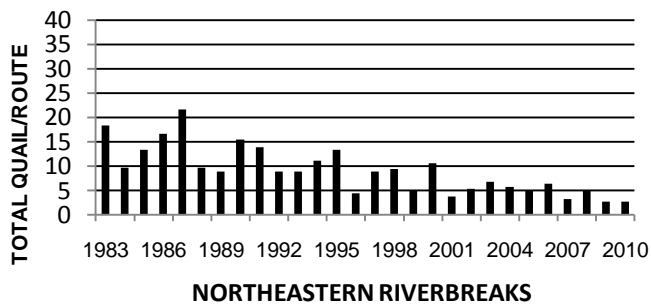
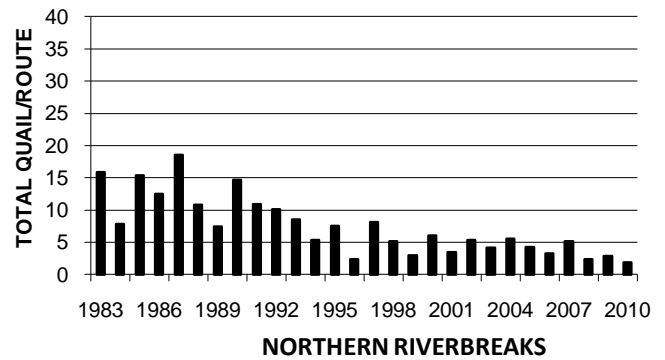
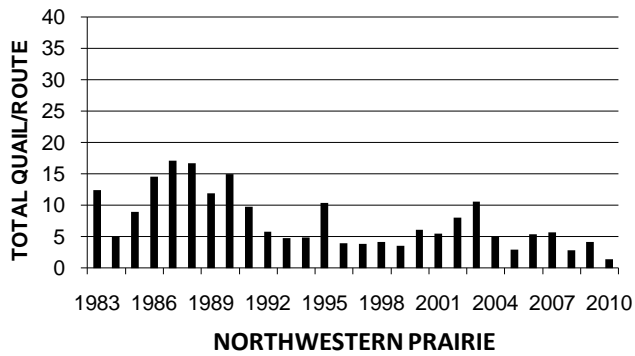


FIGURE 2. Statewide average number of quail counted per route from 1983-2010.



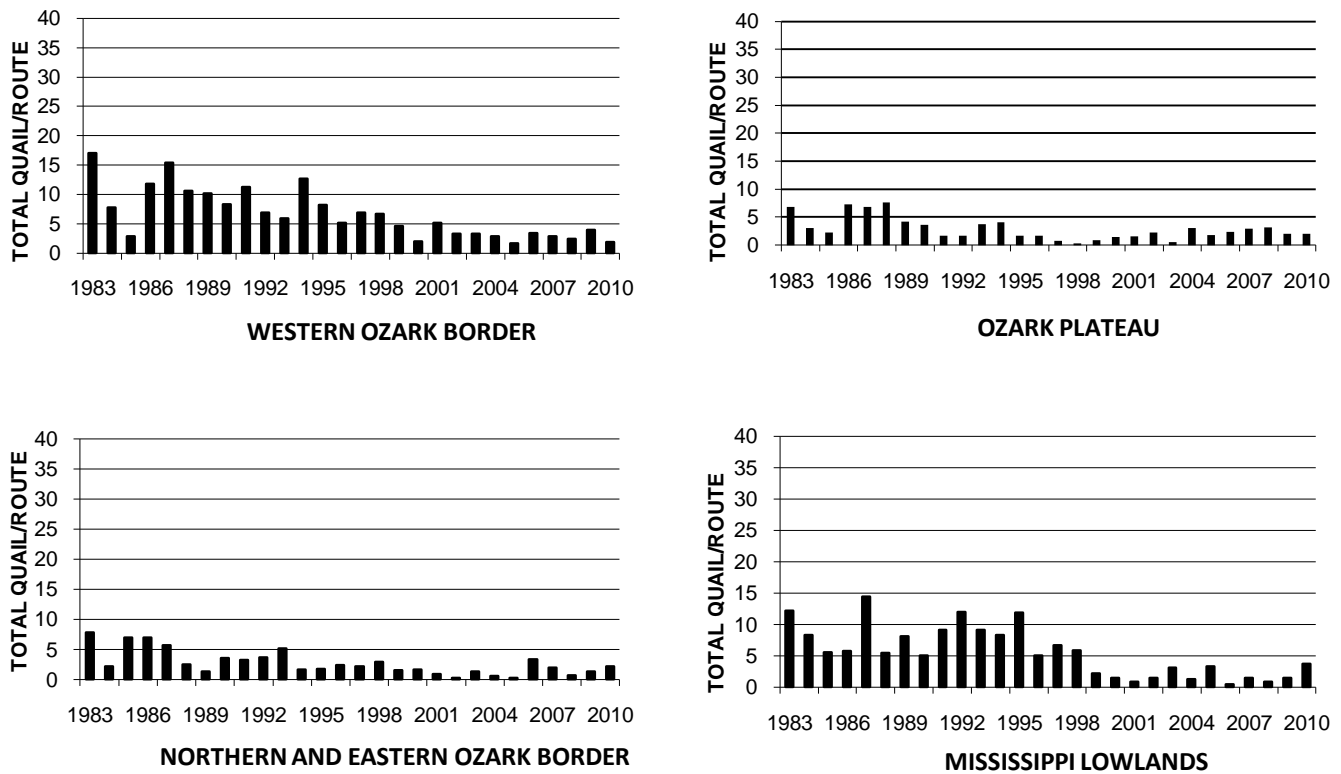


FIGURE 3. Mean quail per 30-mile route by zoogeographic region from 1983-2010.

2009-2010 Quail Hunter Cooperator Survey

The Quail Hunter Cooperator Survey (QHCS) provides detailed measurement of hunting activity by avid Missouri quail hunters. The QHCS was conducted annually from 1983-1992 and in 1999-2000. We plan to administer the QHCS every other year starting with the 2009-2010 season. As Missouri's quail population and number of quail hunters have declined over the past several decades (i.e., 169,000 hunters in 1969 to fewer than 30,000 today), remaining quail hunters are specialists and more efficient at harvesting birds. The skill of the average hunter today is much higher than the skill of the average hunter when populations were high and many inexperienced hunters were active.

In fall 2009, we sent hunting journals to individuals who had purchased a small game permit and reported harvesting quail in the 2008-2009 season. We collected journals from 115 participants. Statewide, cooperators flushed 0.44 coveys per hour, which is 10% less than the 0.49 coveys flushed per hour in 2000, the last time this survey was conducted. Hunters spent 3.25 hours on a trip and harvested an average of 2.4 quail per trip. This survey will be conducted again in the 2011-2012 season. Table 3 shows hunting metrics by zoogeographic region and Table 4 shows the metrics by land ownership type.

TABLE 3. Quail hunting metrics by zoogeographic region from the Quail Hunter Cooperator Survey for the 2009-2010 season.

Zoogeographic Region	Coveys flushed/hour	Harvest/gun hour*	Harvest/trip	Hours/trip
N.W. Prairie	0.37	0.31	2.74	3.62
N. Riverbreaks	0.44	0.34	3.30	3.84
N.E. Riverbreaks	0.55	0.33	1.91	2.88
W. Prairie	0.44	0.32	2.43	3.63
W. Ozark Border	0.56	0.56	4.15	3.28
Ozark Plateau	0.31	0.31	1.20	2.55
N. & E. Ozark Border	0.37	0.28	1.83	2.97
M. Lowlands	0.32	0.15	0.67	3.17

*Harvest/gun hour=Number of birds harvested/number of individuals in hunting party.

TABLE 4. Quail hunting metrics by land ownership from the quail hunter cooperator survey for the 2009-2010 season. See comment above.

Land Ownership	Coveys flushed/hour	Harvest/gun hour	Harvest/trip	Hours/trip
PUBLIC	0.33	0.23	1.20	2.68
PRIVATE	0.51	0.39	2.82	3.23
MDC	0.24	0.16	1.11	3.46

Bobwhite Habitat Conditions

Quail habitat conditions in Missouri vary from good to poor throughout the state. Over-grazing of fescue-dominated pastures, loss of native grass, removal of low growing,

dense woody cover, and increased commodity prices have all led to losses in preferred bobwhite habitat. In addition to habitat loss, heavy winter snows hampers bird survival and three consecutive wet springs have impacted production. Wet springs also increase vegetative succession, resulting in thick, rank stands of grass and forbs that are unsuitable for bobwhite habitat. The Agents' Roadside Survey was conducted in the first two weeks of August, and we received many reports of broods later in the month, indicating a later than normal peak hatch. The heavy rainfall in June and July probably delayed peak hatch until August.

Despite the poor weather conditions, providing quality habitat is still the key to improving bobwhite populations. Many programs are in place to assist private landowners in improving bobwhite habitat on their property, including the USDA Conservation Reserve Program (CRP), Conservation Buffers for Upland Birds (CP 33), MDC programs, and habitat programs from organizations including Quail Unlimited, Quail and Pheasants Forever, and the Quail and Upland Wildlife Federation.

RING-NECKED PHEASANT ABUNDANCE

The Conservation Agents' Roadside Survey measures the number of pheasants observed along 72 standardized 30-mile routes (a subset of the routes sampled for bobwhites) during August 1-15 and provides a reliable predictor of fall pheasant harvest. The 2010 survey showed a continuing decline in Missouri's pheasant population. The 2010 statewide count of 0.32 pheasants per 30-mile route was down 50% compared to 2009, down 79% compared to the previous 5-year average (2005-2009), and 83% lower than the 10-year average (2000-2009; Table 5). By zoogeographic region, counts were highest in the Northeast Riverbreaks (0.42 pheasants per 30-mile route, up 233% compared to 2009). Counts remained the same (0.29 pheasants per route) in the Northern Riverbreaks, and were lower in all other zoogeographic regions. Counts by MDC administrative region are shown in Table 6.

A record low count of pheasants this year is not surprising due to the high snowfall and rainfall amounts received in the northwestern and northeastern portions of the state, which make up Missouri's primary pheasant range. Iowa also reported record low quail and pheasant counts this year due to heavy winter snows and wet spring weather. Loss of habitat continues to affect open-land species such as quail and pheasants. Acres of CRP land are being returned back to crop production, reducing the opportunity to provide habitat in these areas.

Many programs are available to improve habitat for quail and pheasants through USDA Conservation Reserve Program (CRP), Conservation Buffers for Upland Birds (CP 33), MDC programs, and habitat programs from organizations including Quail Unlimited, Quail and Pheasants Forever, and the Quail and Upland Wildlife Federation. The most recent CRP sign-up (Sign-up 39) shows that Missouri had just over 107,000 acres offered with 98.6% of acres offered accepted.

TABLE 5. The number of pheasants observed along 30-mile routes from August 1-15, 2010 by zoogeographic regions (see figure 1b).

Zoogeographic Regions	2009 Index	2-year (2009-2010) % change	5-year (2005-2009) % change	10-year (2000-2010) % change
Northwestern Prairie (18)	0.32	-82.9	-89.1	-89.7
Northern Riverbreaks (21)	0.29	0	-69.7	-83.2
Northeastern Riverbreaks (24)	0.42	233.3	-67.8	-71.1
Western Prairie (3)	0.33	-50.0	-50.0	-78.0
Mississippi Lowlands (6)	0	*	*	*
STATEWIDE (72)	0.32	-50.0	-78.5	-82.9

*Percent change not computed because of zero in numerator or denominator.

TABLE 6. The number of pheasants observed along 30-mile routes from August 1-15, 2010 by MDC administrative region (see figure 1a).

Zoogeographic Regions	2009 Index	2-year (2009-2010) % change	5-year (2005-2009) % change	10-year (2000-2010) % change
Northwest (33)	0.24	-80.4	-89.0	-91.4
Northeast (26)	0.54	366.7	-53.7	-58.4
Kansas City (3)	0	*	*	*
Central (4)	0.25	-50.0	-54.5	-78.7
Southeast (6)	0	*	*	*
STATEWIDE (72)	0.32	-50.0	-78.5	-82.9

*Percent change not computed because of zero in numerator or denominator.

BOBWHITE AND RING-NECKED PHEASANT HUNTING PROSPECTS

Hunting prospects are poor for pheasants and quail for the 2010-2011 season. Quail and pheasant numbers were highest in the Northeast Riverbreaks zoogeographic region. Areas that have a mix of cropland, native grasses, and shrubby cover provide the best opportunity to hunt for quail and pheasants. MDC maintains 19 Quail Emphasis Areas throughout the state that are managed specifically for quail. These areas can be found at the following website <http://mdc.mo.gov/hunting-trapping/birds/upland-game-birds/quail-emphasis-areas>.

For pheasant hunting, there is a youth-only season in the North zone (counties north of I-70 and the portion of St. Charles County south of I-70) on October 30-31. It is open to youth ages 6 through 15. Youths who are not hunter-education certified must hunt in the immediate presence of a properly licensed adult; however, the adult may not hunt pheasants. The regular pheasant season in the North zone is November 1, 2010 through January 15, 2011. The daily bag limit is 2 and the possession bag limit is 4. The Southeast zone (Dunklin, New Madrid, Pemiscot, and Stoddard counties) season runs from December 1-12, 2010. The daily bag limit is 1 and the possession bag limit is 1. Because pheasant harvest is limited to males, hunting has little impact on long-term population trends.

There is also a youth-only season for quail on October 30-31, 2010. It is open to youth ages 6 through 15. Youths who are not hunter-education certified must hunt in the immediate presence of a properly licensed adult; however, the adult may not hunt quail. The regular quail season runs from November 1, 2010-January 15, 2011. The daily bag limit is 8 and the possession bag limit is 16.